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loyal find other ways to express their concern at any actions of fellow members they disagree with and certainly don't rush into print the way you do and then dispatch their poorly researched and sensational article to the people attacking members of their group. As a member of a skeptics group you had a clear responsibility [sic] to check your facts very carefully before rushing into print."

The fallacy in that paragraph is fairly clear. Jim is being criticized for not asking an author why he presented unchecked, erroneous quotes from a debate as truth, as if any excuse (short of deliberate disinformation being presented by the other side or a printer's error) could explain away that sort of sloppy reporting. No, people who publish articles in skeptical newsletters are seldom professionals (by training or because they actually get paid to do this). That, however, does not make shoddy and sloppy methodology right. Despite doing this as a hobby, we have a duty to verify our facts — which is what Jim did by comparing a tape of the debate with the article. The reasons why the mistakes were made originally are immaterial and, in this case in particular, wholly indefensible.

More disturbing to me is the implication that in setting the record straight that Jim, or the Phoenix Skeptics (because we published his article) are being disloyal to the skeptical movement. How can anyone who wants to call himself a skeptic be loyal to anything but the pursuit of the Truth? How can critical thinking, or the application of the scientific method, allow excuses to vary the results of an investigation? "Well, gee, folks, we really *thought* we had cold fusion. Sorry we forgot to mention this little math error. We didn't mean to make it. Please forgive us and don't report that we were wrong."

Right.

Got it.

Very clear now, thanks.

Let me make this clear: no one or nothing is more important than the quest for the truth in our skeptical investigations. As skeptics we expect everyone else on our side to have the same bottom line: the truth. If we do not point out errors made by our side, what credibility do we have pointing out the mistakes made by the other side? Worse yet, not error checking people in the skeptical community, aside from being an abandonment of the scientific method, leads us to building cases and defenses on a foundation of quicksand.

Now if I wanted to make up facts and have folks agree with me, I'd switch to the other side because I could make lots of money over there and have cute groupies. Of course, the problem with lying is that you have to remember everything you've told everyone. With the truth, on the other hand, you have a baseline that doesn't change. Remember the truth and you don't

have to worry about all the different stories you spread around.

Were Jim to exhibit the "loyalty" suggested above, he'd abandon his intellectual integrity. He would lose credibility. He would have condoned the manufacture (accidental thought it might have been) of a quote that could have been later used to bolster an argument. That would be come the weak link in a chain that might unravel later to much greater harm.

Walking away from the truth would exact a nasty price.

As a member of the Phoenix Skeptics the only thing we ask of you is that you be willing to devote yourself to critical thinking and the establishment of truth through the scientific method when looking at paranormal phenomena. Part of that includes looking with a critical eye at things said by other skeptics, or published in skeptical magazines. If we cannot hold ourselves to that minimal standard of truth, we have no right making the same demand of others.

To suggest we are traitors for pointing out errors in the skeptical community is more dangerous than all the New Age crackpots piled together. I do not expect that one member of the Australian Skeptics speaks for anyone more than himself — at least, I hope not. Then again, perhaps it is very useful to have a reminder, even from our side, why being skeptical is a very good thing.

Ralph Epperson: Clueless Creationist
By Jim Lippard

While Tucson resident Ralph Epperson is better known as a conspiracy theorist and author of *The Unseen Hand: An Introduction to the Conspiratorial View of History*, my first view of him was as a creationist guest on Rev. Bill Bowler's public access cable television show. On this program, Epperson was touting the Paluxy River footprints as evidence that human beings and dinosaurs lived together in Texas. What specifically caught my attention was Epperson's remark that, when he had endorsed the "mantracks" at Paluxy in a guest editorial in the *Tucson Citizen*, he had been assailed by Dr. Gary Mechler, Pima Community College astronomer and Tucson Skeptics member. According to Epperson, he called Mechler and challenged him to name the species of dinosaur responsible for the Paluxy footprints, and Mechler was unable to do so.

I telephoned Gary to verify Epperson's story, and to pass on the names of dinosaurs likely to have made the Paluxy tracks. It was thus that I obtained Ralph Epperson's address and telephone number. I sent a letter to Epperson on September 12, 1990 informing him of the special issue of the *Creation/Evolution* journal debunking Paluxy and of the names of the dinosaur

species which probably made the tracks. When I received no response after almost two weeks, I called Epperson to ask what he thought.

Epperson had apparently not bothered to look up the reports I had brought to his attention, but insisted that there are definitely genuine human tracks at Paluxy, as has been demonstrated by Donald Patton. He informed me that he would be speaking the following Saturday at a meeting of the Saturday Morning Breakfast Club (Tucson's equivalent of Phoenix's Arizona Breakfast Club) on the subject, and would have slides of the footprints which he had obtained from Patton. He also told me that Tucson resident Clifford Burdick's track, taken from Paluxy, had recently been sectioned producing evidence that it was a genuine human print and not a carving, as has been alleged.

I next called Ronnie Hastings, a science teacher in Waxahachie, Texas, who, along with Glen Kuban, has been one of the major investigators and debunkers of the Paluxy "mantracks." He gave me the general details of Patton's work and sent me several articles about the tracks which addressed Patton's claims. He also pointed out that most creationists seem to be getting tired and embarrassed by the Paluxy claims, and that papers presented at the International Conference on Creationism in Pittsburgh this summer by Patton and Hugh Miller were greeted with a fairly poor reception. Hastings also indicated that *Origins Research*, probably the most scientific and fair-minded of creationist publications, is expected to print an article debunking Patton's claims.

With the information from Hastings in hand, I was prepared to attend Epperson's talk. I made copies of the materials from Hastings as well as of most of the major articles from three issues of *Creation/Evolution* on the subject of Paluxy to give to Epperson.

The Breakfast Club

The morning of Saturday, September 29 finally arrived, and I got up early to arrive by 8:15 a.m. The lecture was supposed to begin at 8:30 a.m., with breakfast beginning at 8 a.m. When I arrived, people were taking turns making various announcements and comments at the microphone. The man who was speaking when I entered was saying something about visiting Phoenix to get the government to send him some sort of documents. When he returned to Tucson, however, he claimed that conspirators intercepted his mail. He then held up a book titled *The Talmud Unmasked*, offering to sell a photocopy for \$2. This book, he claimed, would enable one to know just "who's causing the trouble in this world." Next, a woman got up and railed against the legal system, claiming that "you're guilty when you go into that courtroom. ... No matter what you go into court for, you are guilty." When she had finished, the formal ceremonies began—an opening prayer, the pledge of allegiance (post-1954 version with "under God," of course), and the singing of "God Bless America." Then,

without further adieu, was announced "our great speaker who you all know and love," Ralph Epperson.

Epperson began his talk by stating that he aimed to convince his audience that "evolution is a fraud." He admitted that "I'm not a scientist," but claimed "I don't have to be." Evolution is a blatant fraud to anyone who considers the least bit of evidence, according to Epperson. His presentation, however, betrayed the fact that not only is Epperson ignorant of the facts supporting evolution, he can't even get the creationists' own arguments straight.

The Theory of Evolution Defined

His initial remarks were borrowed from Duane Gish: his mother told him that frogs turning into princes was the stuff of fairy tales, but college told him that it could happen by evolution. And, of course, after really studying the problem, his mother proved to be correct. "Evolution did not happen, could not happen, and will not happen," Epperson remarked, using another popular Gish catch-phrase.

A slide of two seeds was then shown. Epperson told a story about how he planted the two seeds, one of which produced a beautiful plant while the other failed to grow. Digging it up, he found it to be not a seed, but a small rock. "Why do we believe that rocks can grow?" asked Epperson. "What process turns rocks into flowers?" According to Epperson, "evolution says rocks turn into flowers." This was certainly news to me. No elaboration of this remark was given.

Darwin and Paleontologists Admit the Fraud

Epperson's next outrageous claim was that "Darwin admitted his theory was a fraud." To support this, he cited several quotations from Darwin's *Origin of Species*. In these quotations, Darwin states that "if numerous species, belonging to the same genera or families, have really started into life all at once, the fact would be fatal to the theory of descent with slow modification through natural selection" and admits that the fossil record does not contain a "finely graduated organic chain." Epperson's argument is that evolution requires both (1) continuous sequences of intermediate forms and (2) different forms of life appearing at different times, and that Darwin admitted that both of these conditions are falsified. But actually, Darwin did not admit either of these things, and (1) is simply not required by evolution. In Darwin's time, the fossil record was much less complete than it is today, and Darwin hoped that eventually continuous gradations of species would be revealed. Today, nobody expects continuous gradations—the theory does not require it, now that we have better understanding of genetics, which Darwin didn't know about. Epperson's claim that, if evolution is true, there should be creatures 99% reptile and 1% bird, 98% reptile and 2% bird, and so on, is simply false. Claim (2), on the other hand, is required, but is also satisfied by the fossil record, contrary to Epperson (more on this in a moment).

In addition to citing Darwin, Epperson also claimed that at least ten of the leading paleontologists of today (whom Epperson failed to name) agree that there are no intermediate forms and that all forms of life may be found in the oldest layers of rock. That is, that today's paleontologists agree with Epperson's Darwin in admitting that the above two conditions are falsified. There are two mistakes going on here: first, Epperson is using the debate between gradualists and punctuationists as to the types of transitions involved in evolution to argue that there are no transitions, when in fact both gradualists and punctuationists admit that the fossil record contains transitional forms. One person Epperson quotes in support of the claim that there are no intermediates is punctuationist Stephen Jay Gould. But Gould himself has written that "it is infuriating to be quoted again and again by creationists—whether through design or stupidity, I do not know—as admitting that the fossil record includes no transitional forms. Transitional forms are generally lacking at the species level but are abundant between larger groups. The evolution from reptiles to mammals ... is well documented." (Cole 1981, p. 38) The second mistake is that Epperson is misrepresenting the "Cambrian explosion." It is simply false that all forms of life are present in the earliest strata. What is true is that Cambrian rock, some 600 million years old (the second-oldest period, not the oldest), contains most major groups of life. This does not mean that nearly all species are represented in the Cambrian—quite the opposite. Species of the class of mammals, for example, do not appear until the Mesozoic era, 225 million years ago. Further, there are fossils of primitive unicellular organisms in the Precambrian, and the presence of many major groups of organisms in the Cambrian does not mean that they appeared simultaneously—the Cambrian lasted for millions of years (see Gould 1977).

Epperson next characterized Gould and Niles Eldredge's theory of punctuated equilibrium by saying, "One morning a dinosaur laid an egg, and when it hatched out came a bird. ... A possum gave birth to a horse." Of course punctuated equilibrium says nothing of the sort—it describes speciation occurring over a period of 50,000 years or so, and the resulting new species is still quite closely related to the original.

Creation as Science—or Not?

At this point, Epperson commented that "creation is a science, evolution is a fairy tale." But leading creationists, including those whom Epperson draws heavily upon, deny that creationism is science. Henry Morris, president of the Institute for Creation Research, writes that "Although many believe special creation to be an absolute fact of history, they must believe this for theological, rather than scientific reasons. Neither evolution nor creation can be either confirmed or falsified scientifically." (Morris 1985, p. 9) Duane Gish, the ICR's vice president, wrote in a letter to the

editor in the July 1981 issue of *Discover* magazine: "Stephen Jay Gould states that creationists claim creation is a scientific theory. This is a false accusation. Creationists have repeatedly stated that neither creation nor evolution is a scientific theory (and each is equally religious)" (quoted in Judge William R. Overton's decision in *McLean v. Arkansas*).

Eppersonian Geology

The next topic of attack was geology. Epperson claimed that "geologic age is not determined by vertical superposition of strata" because (1) "there is no possible explanation of the Rocky Mountain reversal of strata" and (2) there are missing strata everywhere, and the entire geological column can be found in no single location. With these two remarks Epperson makes clear his complete ignorance of geology. His first example, a case of overturned strata (where older strata are on top and younger on the bottom), apparently refers to the Lewis Overthrust in the northern Rocky Mountains. Epperson claimed that it is impossible that such a huge region could have been flipped over. But nothing of the sort happened or would have needed to happen to produce the reversal, which simply involves Precambrian rock which has thrust upward over Cretaceous rock (see Strahler 1987, ch. 40, "Inversions of the Order of Strata"). Epperson doesn't seem to recognize the difference between overturning and overthrusting: only the former involves the "flipping over" of strata. His second claim is true—such missing layers of strata are called unconformities, of which there are four types. Unconformities are caused by such things as erosion and lack of deposition (e.g., due to lack of tectonic activity in a region). (See Strahler 1987, pp. 300-305.)

Paluxy Man Revisited

At this point, Epperson finally came to his human footprint claims. He started with a slide of what he claimed was a Precambrian trilobite fossil in a human sandalprint. The slide shown was of the "Meister print," from the middle Cambrian (not Precambrian, in which no trilobites are found). This "footprint" is no such thing—it has been analyzed by geologists and found to be simply a natural break in the rock (Stokes 1986, summary in Strahler 1987, pp. 459-460). An actual sandal print would have displayed an elevated rim around the print; the Meister print lacks this. Further, creationists do not even know which direction is "up" on the fossil, so there is a 50% chance that the "sandal print" is from the underside of the shale bed in which it was found. No evidence of a trail of tracks has been found in the shale bed where the Meister fossil was discovered.

Epperson then devoted time to the Paluxy River footprints, which most creationists now agree are dinosaur footprints. Epperson, following Carl Baugh and Don Patton, claims that in one set of tracks at Paluxy, the Taylor Trail, human prints may be found inside the dinosaur prints. (Epperson also seems to go

further and claim that there are "thousands" of human tracks at Paluxy, based on his reading of John Morris' 1980 book *Tracking Those Incredible Dinosaurs and the People Who Knew Them*, a book which was withdrawn from circulation when Glen Kuban, Ronnie Hastings, and the other "Raiders of the Lost Tracks" demonstrated their dinosaurial origin. Epperson seems to think the book will be reissued as a result of Patton's work.)

The slides Epperson showed of Patton's work were thoroughly unconvincing. Patton's technique is to use muddy water to partially fill the dinosaur prints, which he claims results in clearly visible human prints. I saw no human features in the slides Epperson showed, and he made no attempt to point out the "five toes, arch, and heel" he claimed were visible. When I commented that I didn't see these features to Epperson after his talk, he claimed that they are more visible in a videotape of Patton's. (For details on these new claims, see Kuban 1989.)

Epperson also maintained that the Caldwell print of Clifford Burdick is a genuine human footprint, even though it has long been identified as a carving and admittedly purchased as such by Stanley and Marian Taylor in the 1960's and not found in the Paluxy riverbed as Carl Baugh claims. Caldwell himself, as well as other witnesses, agree that they never saw the print in the riverbed. The track has been identified as the product of one of the Adams brothers of Glen Rose, Texas, who are known for carving footprints (Hastings 1987, p. 11). Epperson claimed that cross-sectioning of the track revealed pressure ridges which prove its genuineness, but to the contrary the alleged "pressure ridges" are stromatolitic features (Hastings 1990).

Probability and Thermodynamics

Thermodynamics disproves evolution, was Epperson's next claim. He didn't go into details, but quoted Henry Morris making the same claim. He also argued that "any event with a probability of less than one chance in 10^{100} therefore cannot occur" on the basis of configurations of all particles in the universe. (This is of course false—if a random number generator selects a number between 1 and 10^{100} , the probability of that particular number having been selected is 1 in 10^{100} .) But this is irrelevant, since it is a mistake to equate evolution with chance. Epperson also approvingly quoted Fred Hoyle and Chandra Wickramasinghe's inaccurate 1 in $10^{40,000}$ figure for the possibility of DNA arising by chance.

Regarding design in nature, Epperson made reference to the "Face on Mars." He claimed that scientists are prepared to spend "trillions of our tax dollars" to look for life on Mars to see if the face was designed by intelligence, while ignoring the overwhelming evidence of intelligent design in nature. Contrary to Epperson, the Mars Explorer's central purpose is not to examine the "Mars Face," which most scientists view rather skeptically.

The Bogus "Lucy" Claim

"Missing links" were then addressed as Epperson put up an unreadable slide of 12 alleged human ancestors and stated that "every one of them is a fraud, without a doubt." Regarding Johanson's "Lucy" skeleton, Epperson asserted that "The only reason they believe she walked upright was the knee bone. Maybe the hip. But there's a problem. The hip was found 200 feet lower and 1.5 miles away" from the rest of the skeleton. This is a bogus creationist claim I have addressed elsewhere (Lippard 1989 & 1990, pp. 27-28 & forthcoming). Epperson is just wrong about the hip, the claim has been made about the knee. In fact, the knee joint which was found at a different location has never been claimed to be Lucy's. There is also other evidence for Lucy's bipedality than the knee joint (Lippard 1990, pp. 27-28).

Age of the Universe

In Epperson's final attack on evolution, he cited 68 "age of earth" measurements which indicate a young universe. These included magnetic field decay, atmospheric helium, the shrinking sun, meteoritic dust, and population growth. These arguments have all been addressed in detail elsewhere (e.g., Dalrymple 1984; Lippard 1990, pp. 24-25 & forthcoming; Milne 1984; Strahler 1987). In brief, a few criticisms are: there are processes which remove meteoritic dust and atmospheric helium, the magnetic field undergoes reversals and cannot be extrapolated back in time in a linear fashion, the sun radius oscillates over time, and the population growth argument is simply absurd.

A Communist Plot

Epperson completed his lecture by asking why the conscious fraud of evolution has been perpetrated. His answer: humanism. Evolution, according to Epperson, is "part of a religion" and those in control of science and the public schools are promoting that religion. He put up a slide of Paul Kurtz, chairman of CSICOP, and asserted that Kurtz is "a humanist, an atheist, and a communist." Essentially, according to Epperson, evolution is a socialist plot, and he quoted a Socialist Worker's Party statement that "Modern Socialism is closely allied to the modern scientific theory of evolution" to prove it.

Thus concluded Epperson's talk. But the absurdity did not end—in the question and answer session, Epperson showed himself to be a Velikovskyite, arguing that the biblical flood was caused by a large object (Mercury or Mars, said Epperson; Venus, says Velikovsky) passing within 20,000 miles of the Earth. He also claimed that there are 50-foot tall pear trees with fruit still frozen on the branches—at the north pole. Mammoths and mastodons were frozen by space ice from a comet or asteroid colliding with the Earth.

Ronnie Hastings reports that at the recent International Conference on Creationism, several creationists (mainly associated with Students for Origins Research) have been making serious efforts to be scientific in their methodology. These creationists

tend to find the old school of Henry Morris-style creationists to be an embarrassment, and rightly so. Ralph Epperson, I am afraid, is a particularly bad example from the old school.

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Acknowledgments

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Meeting Announcements

Our January meeting will take place on January 5th, 1991. Speaking will be G. Harry Stine on the topic of the Neurophone, which I remember reading about, but can no longer find a reference for. As I recall, it is an invention for which claims have been made that it

allows deaf people to hear, or somehow bypasses part or parts of the ear to allow hearing. Mr. Stine has written on technology and future space development, including a long series of "The Alternate View" columns for *Analog*, and the books *The Third Industrial Revolution* and *The Space Enterprise*. He has also written science fiction, some of it as Lee Correy. -- Ron Harvey

Our February meeting will take place on February 2nd, 1991. The topic of this meeting is not available at the time of this printing, but, as per usual, it will be spectacular. (As always, if you or someone you know has a presentation you believe would be of interest to our membership, please let Ted or Mike know.)

Our meetings are held at the Jerry's Restaurant at 12:30pm on Scottsdale/Rural Road between McKellips and the river bottom, usually on the first Saturday of the month. For more information, Mike Stackpole can be reached at 231-8624.

Editorial Prattle

A whole host of things have been happening with the Phoenix Skeptics since the last issue of this newsletter. I apologize for its tardiness. We had a dearth of articles for a bit, then some came in at the same time I had to finish a novel. Writing for a living makes one someone less inclined to write as a hobby. Luckily, if articles keep coming in, I won't have to do so much, which will make the publication more regular. (Being published by us won't help a drive for tenure or put you in line for a Nobel, but you'll have the Skeptics' undying gratitude and that counts for a whole lot.

I was invited to speak to the Phoenix Chapter of the American Atheists back in September. I gave them my "Satanism in America," presentation. This led to an invitation to give the same talk at ASU in a presentation sponsored by the Student Atheists. The ASU talk was covered by both the State Press and the Tempe Daily News. The Tempe Daily News article, in turn, led to a two hour stint on KFYI on Thanksgiving morning.

It is rather odd to spend the morning of a national holiday talking about the hoax that is the Satanic Conspiracy scare, but the show went very well. I was on with Brian Donnelly as he filled in for Barry Young and Bob Mohan during the 8-10 am slot. There were a certain number of religious individuals who wanted to know what our religious affiliations were, but Brian and I both pointed out that what we believed was unimportant. We were discussing facts and claims that could be proven or disproven.

One caller noted that "without God we could not have Truth." I challenged that assumption by pointing out that the sun would be a solar fusion reactor no matter if you believed the sun really was Apollo in his chariot or not. Reality, or the truth that underlies the universe, has nothing to do with belief, unless, of course, one is going to maintain that "reality" itself is merely the product of a belief system.